CLAIMS

1. An exhaust emission control device with a post-processing device for allowing exhaust gas to pass therethrough for gas purification incorporated in an exhaust pipe of an internal combustion engine, comprising a plasma generator arranged upstream of the post-processing device for discharging electricity into the exhaust gas to generate plasma, flow-through type oxidation catalyst arranged upstream of the plasma generator, fuel adding means arranged upstream of the oxidation catalyst for adding fuel in the exhaust gas and temperature increasing means for increasing exhaust temperature to a level enough for oxidation reaction on the oxidation catalyst of the fuel added by the fuel adding means.

2. The exhaust emission control device according to claim 1, further comprising a temperature sensor arranged between the oxidation catalyst and the plasma generator for detecting exhaust temperature, fuel being added properly by the fuel adding means only on a condition that a detected value of the temperature sensor exceeds a predetermined threshold, the temperature of the exhaust gas being increased by the temperature increasing means before the fuel addition by the fuel adding means on a

condition that the detected vale of the temperature sensor is below the predetermined threshold.

3. The exhaust emission control device according to claim 1, wherein fuel adding means is fuel injection control means which causes the fuel injection unit to conduct post-injection followed by the main injection and with non-ignition timing later than a compressive top dead center.

4. The exhaust emission control device according to claim 2, wherein fuel adding means is fuel injection control means which causes the fuel injection unit to conduct post-injection followed by the main injection and with non-ignition timing later than a compressive top dead center.

5. The exhaust emission control device according to claim 1, wherein the temperature increasing means for increasing the exhaust temperature is suction throttling means for properly throttling suction flow rate.

6. The exhaust emission control device according to claim 2, wherein the temperature increasing means for increasing the exhaust temperature is suction throttling means for

properly throttling suction flow rate.

7. The exhaust emission control device according to claim 3, wherein the temperature increasing means for increasing the exhaust temperature is suction throttling means for properly throttling suction flow rate.

8. The exhaust emission control device according to claim 4, wherein the temperature increasing means for increasing the exhaust temperature is suction throttling means for properly throttling suction flow rate.

9. The exhaust emission control device according to claim 1, wherein the temperature increasing means for increasing the exhaust temperature is fuel injection controlling means for causing the fuel injection unit to conduct main injection delayed within a combustible range to the normal injection.

10. The exhaust emission control device according to claim 2, wherein the temperature increasing means for increasing the exhaust temperature is fuel injection controlling means for causing the fuel injection unit to conduct main injection delayed within a combustible range to the normal injection.

11. The exhaust emission control device according to claim 3, wherein the temperature increasing means for increasing the exhaust temperature is fuel injection controlling means for causing the fuel injection unit to conduct main injection delayed within a combustible range to the normal injection.

12. The exhaust emission control device according to claim 4, wherein the temperature increasing means for increasing the exhaust temperature is fuel injection controlling means for causing the fuel injection unit to conduct main injection delayed within a combustible range to the normal injection.

13. The exhaust emission control device according to claim 1, wherein the temperature increasing means for increasing the exhaust temperature is fuel injection controlling means for causing the fuel injection unit to conduct post injection with a combustible timing just after the main injection.

14. The exhaust emission control device according to claim 2, wherein the temperature increasing means for increasing the exhaust temperature is fuel injection controlling means for causing the fuel injection unit to

conduct post injection with a combustible timing just after the main injection.

15. The exhaust emission control device according to claim 3, wherein the temperature increasing means for increasing the exhaust temperature is fuel injection controlling means for causing the fuel injection unit to conduct post injection with a combustible timing just after the main injection.

16. The exhaust emission control device according to claim 4, wherein the temperature increasing means for increasing the exhaust temperature is fuel injection controlling means for causing the fuel injection unit to conduct post injection with a combustible timing just after the main injection.

17. The exhaust emission control device according to claim 1, further comprising judging means for determining whether fuel addition is required or not through monitoring at least either of current and voltage upon generation of plasma in the plasma generator.

18. The exhaust emission control device according to claim 2, further comprising judging means for determining

whether fuel addition is required or not through monitoring at least either of current and voltage upon generation of plasma in the plasma generator.

19. The exhaust emission control device according to claim 3, further comprising judging means for determining whether fuel addition is required or not through monitoring at least either of current and voltage upon generation of plasma in the plasma generator.

20. The exhaust emission control device according to claim 4, further comprising judging means for determining whether fuel addition is required or not through monitoring at least either of current and voltage upon generation of plasma in the plasma generator.

21. The exhaust emission control device according to claim 5, further comprising judging means for determining whether fuel addition is required or not through monitoring at least either of current and voltage upon generation of plasma in the plasma generator.

22. The exhaust emission control device according to claim 6, further comprising judging means for determining whether fuel addition is required or not through

monitoring at least either of current and voltage upon generation of plasma in the plasma generator.

23. The exhaust emission control device according to claim 7, further comprising judging means for determining whether fuel addition is required or not through monitoring at least either of current and voltage upon generation of plasma in the plasma generator.

24. The exhaust emission control device according to claim 8, further comprising judging means for determining whether fuel addition is required or not through monitoring at least either of current and voltage upon generation of plasma in the plasma generator.

25. The exhaust emission control device according to claim 9, further comprising judging means for determining whether fuel addition is required or not through monitoring at least either of current and voltage upon generation of plasma in the plasma generator.

26. The exhaust emission control device according to claim 10, further comprising judging means for determining whether fuel addition is required or not through monitoring at least either of current and voltage upon

generation of plasma in the plasma generator.

27. The exhaust emission control device according to claim 11, further comprising judging means for determining whether fuel addition is required or not through monitoring at least either of current and voltage upon generation of plasma in the plasma generator.

28. The exhaust emission control device according to claim 12, further comprising judging means for determining whether fuel addition is required or not through monitoring at least either of current and voltage upon generation of plasma in the plasma generator.

29. The exhaust emission control device according to claim 13, further comprising judging means for determining whether fuel addition is required or not through monitoring at least either of current and voltage upon generation of plasma in the plasma generator.

30. The exhaust emission control device according to claim 14, further comprising judging means for determining whether fuel addition is required or not through monitoring at least either of current and voltage upon generation of plasma in the plasma generator.

31. The exhaust emission control device according to claim 15, further comprising judging means for determining whether fuel addition is required or not through monitoring at least either of current and voltage upon generation of plasma in the plasma generator.

32. The exhaust emission control device according to claim 16, further comprising judging means for determining whether fuel addition is required or not through monitoring at least either of current and voltage upon generation of plasma in the plasma generator.

33. An exhaust emission control device with a catalyst regenerative particulate filter as a post-processing device incorporated into an exhaust pipe, comprising NO_x reduction catalyst arranged downstream of the particulate filter for reductive purification of NO_x in exhaust gas and a plasma generator arranged upstream of the particulate filter for discharging electricity into the exhaust gas to generate plasma, said plasma generator being constructed to be actuated in an operating status with lower exhaust temperature.

34. The exhaust emission control device according to claim 33, characterized in that it comprises a temperature

sensor for detecting exhaust temperature and a controller for causing the plasma generator to be actuated on the basis of a detection signal from the temperature sensor and when the exhaust temperature is below a predetermined value.

35. The exhaust emission control device according to claim 34, wherein the controller is constructed such that a generated plasma amount is optimized upon actuation of the plasma generator and depending upon the exhaust temperature.